DETAILED ACTION

1. This application is responsive to application number (10539429) filed on November 04, 2005. Claims 1-22 are pending and have been examined.

Response to Arguments

2. Applicant's arguments, see Remarks, filed June 10, 2010, with respect to claims have been fully considered and are persuasive. The Advisory Action of June 21, 2010 has been withdrawn.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 2-7 rejected under 35 U.S.C. 102(b) as being anticipated by Zeng et al (US 6,236,757, hereafter Zeng).

As per **claim 6**, Zeng discloses method for encoding an image with which a hierarchical mesh is associated, implementing a wavelet-encoding of said mesh, wherein said encoding method implements at least two types of wavelets applied selectively to distinct zones of said image (column 3 lines 20-23 and lines 50-52),

wherein the method comprises, for each of said zones, the application to said mesh, of coefficients of said type of wavelets to said zone, taking account of a scalar value associated with said mesh at an updating point of said zone and said scalar value associated with said mesh at certain points at least, neighboring said updating point (column 3 lines 39-42; Zeng teaches that there is a common scale that is used).

As per **claim 2**, Zeng discloses encoding method according to claim 1 wherein the method comprises: partitioning said image into at least two zones of distinct natures, the nature of each zone being a function of at least one characteristic parameter of said mesh in said zone; for each of said zones, assigning, at least as a function of said nature, of a type of wavelet enabling the optimizing of said encoding of said mesh of said zone (column 3 lines 32-49).

As per **claim 3**, Encoding method according to claim 2 wherein said characteristic parameter of said mesh takes account of the density of said mesh in said zone (column 3 lines 32-49).

As per **claim 4**, Zeng discloses encoding method according to claim 2 wherein said nature of said zone belongs to the group comprising: at least one type of texture; at least one type of contour; at least one type of singularity; at least one type of color; and at least one type of shape (column 3 lines 50-52).

As per **claim 7**, Zeng discloses encoding method according to claim 6, wherein said scalar value represents a parameter of said mesh belong to the group comprising:

the luminance of said mesh (column 6 lines 28-33); and

at least one chrominance component of said mesh (column 6 lines 28-33; the examiner understanding of this limitation is that the luminance and chrominance are a pixel and images are inherently made up of pixels).

Regarding **claim 15**, arguments analogous to those presented for claim 1 are applicable for claim 15.

Regarding **claim 16**, arguments analogous to those presented for claim 1 are applicable for claim 16.

Regarding **claim 17**, arguments analogous to those presented for claim 1 are applicable for claim 17.

Regarding **claim 18**, arguments analogous to those presented for claim 1 are applicable for claim 18.

Regarding **claim 19**, arguments analogous to those presented for claim 1 are applicable for claim 19.

structuring said signal in the form of packets each associated with one of said zones of said image, each of said packets comprising the following fields: a field indicating the start of a packet; a field conveying an identifier of said packet; an information header field; a field comprising said pieces of information on said type of wavelets assigned to said zone; a field comprising wavelet coefficients applied to said mesh of said zone; a field relating to the form of said mesh of said image; a field indicating an end of a packet (column 1 lines 33 – 43; it is known in the art to transfer information between encoders and decoders to properly synchronize information).

Regarding **claim 20**, arguments analogous to those presented for claim 19 are applicable for claim 20

As per **claim 21**, Zeng discloses encoding method according to claim 1 and further comprising application of the method to at least one of the fields belonging to the group comprising: video streaming; video storage; video on demand; and video mail (column 6 lines 54-56).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claim 5 and 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Zeng et al (US 6,236,757, hereafter Zeng) in view of well-known knowledge.

As per **claim 5**, Zeng discloses encoding method according to claim 1 wherein said wavelet types belong to the group (column 5 lines 15-21).

However, Zeng does not explicitly teach encoding method according to claim 1 wherein said wavelet types belong to the group comprising: Loop wavelets; Butterfly wavelets; Catmull-Clark wavelets; and affine wavelets.

In the same field of endeavor, it is well known knowledge to apply these wavelet types to different scenarios depending on a image region. Official Notice is taken.

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Zeng in view of well-known knowledge. The advantage would be the optimization of coding regions within an image.

As per **claim 8**, Zeng discloses encoding method according to claim 6.

However, Zeng does not explicitly teach wherein the method furthermore comprises encoding said wavelet coefficients implementing a technique belong to the group comprising:

a zero-type technique; and

an EBCOT type technique.

In the same field of endeavor, it is well known knowledge that wherein the method furthermore comprises encoding said wavelet coefficients implementing a technique belong to the group comprising:

a zero-type technique; and

an EBCOT type technique (column 5 lines 9 – 33; these are techniques well-known in the art an option Zeng provides a quadtree option but techniques for transforming wavelet coefficients are not novel and are well-known in the art).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Zeng in view of well-known knowledge. The advantage would be the optimization of coding regions within an image.

8. Claims 9-14 rejected under 35 U.S.C. 103(a) as being unpatentable over Zeng et al (US 6,236,757, hereafter Zeng) in view of Pardas et al (US 6,516,093, hereafter Pardas).

As per **claim 9**, Zeng discloses encoding method according to claim 6.

However, Zeng does not explicitly teach wherein, with said image belong to a sequence of successive images, said method furthermore comprises comparing said wavelet coefficients of said image with the wavelet coefficients of at least one image preceding or following said image in said sequence, so as to avoid the implementation of said encoding step for wavelet coefficients of said image identical to those of said preceding or following image.

In the same field of endeavor, Pardas teaches wherein, with said image belong to a sequence of successive images, said method furthermore comprises comparing said wavelet coefficients of said image with the wavelet coefficients of at least one image preceding or following said image in said sequence, so as to avoid the implementation of said encoding step for wavelet coefficients of said image identical to

those of said preceding or following image (column 4 lines 35 – 40 and column 5 lines 31 - 50).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Zeng in view of Pardas. The advantage being improving the accuracy of the texture and motion of the image.

As per **claim 10**, Zeng discloses method for encoding an image with which a hierarchical mesh is associated, implementing a wavelet-encoding of said mesh, wherein said encoding method implements at least two types of wavelets applied selectively to distinct zones of said image (column 3 lines 20-23 and lines 50-52).

However, Zeng does not explicitly teach wherein the method enables the encoding of a sequence of successive images, and said image is an error image, obtained by comparison of an original image of said sequence and an image built by motion estimation/compensation, said image comprising at least one error region to be encoded and at least one of any existing substantially empty region.

In the same field of endeavor, Pardas teaches wherein the method enables the encoding of a sequence of successive images, and said image is an error image, obtained by comparison of an original image of said sequence and an image built by motion estimation/compensation, said image comprising at least one error region to be encoded and at least one of any existing substantially empty region (column 4 lines 35 – 40 and column 5 lines 31 - 50).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Zeng in view of Pardas. The advantage is the improvement in accuracy of the texture and motion of the image.

As per **claim 11**, Zeng discloses encoding method according to claim 10.

However, Zeng does not explicitly teach wherein said partition step comprises detecting said error regions of said image by thresholding, making it possible to determine at least one region of said image having an error greater than a predetermined threshold.

In the same field of endeavor, Paradas teaches wherein said partition step comprises detecting said error regions of said image by thresholding, making it possible to determine at least one region of said image having an error greater than a predetermined threshold (column 5 lines 51 – 61).

Therefore, it would have been obvious for one having skill in the art at the time of the invention to modify the invention of Zeng in view of Pardas. The advantage is the improvement in accuracy of the texture and motion of the image.

As per **claim 12**, Zeng discloses encoding method according to claim 11, wherein said partitioning step also comprises grouping together of at least certain of said detected error regions in parallelepiped-shaped blocks (Figure 7, column 5 lines 8 – 33).

As per **claim 13**, Zeng discloses encoding method according to claim 12 wherein said partitioning step comprises creating said zones of said image in the form of sets of blocks of a same nature (Figure 2B; column 3 lines 39-52).

As per **claim 14**, Zeng discloses encoding method according to claim 11 wherein said partitioning step comprises creating said zones of said image from said detected error regions, implementing a quadtree type technique (Figure 6, column 5 lines 8 – 14).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHIKAODILI E. ANYIKIRE whose telephone number is (571)270-1445. The examiner can normally be reached on Monday to Friday, 7:30 am to 5 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272 - 7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marsha D. Banks-Harold/
Supervisory Patent Examiner, Art Unit 2621

/Chikaodili E Anyikire/
Patent Examiner AU 2621